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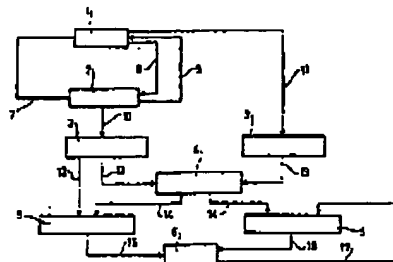
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(54) Système d'utilisation de crédit restaurant.

(57) Le système selon l'invention supprime les tâches de
 manipulation et de transport de papier.

Système d'utilisation de crédit restaurant comprenant des
 émetteurs, des entreprises, des restaurants, des utilisateurs et
 une centrale de règlement du crédit restaurant, caractérisé en
 ce que les émetteurs 1 émettent des informations représentant
 les crédits restaurants en unités-repas qui sont enregistrées
 dans les terminaux d'entreprise 2, chaque terminal d'entreprise
 2 servant à charger en unités-repas des cartes de crédit
 restaurant 3 des utilisateurs, chaque restaurant étant pourvu
 d'un terminal 5 dans lequel sont déchargées les cartes de
 crédit restaurant 3 des utilisateurs, les informations concer-
 nant les unités repas encaissées dans chaque terminal de
 restaurant 5 étant transmises au terminal de la centrale de
 règlement du crédit.



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Vente des fascicules à l'IMPRIMERIE NATIONALE, 27, rue de la Convention — 75732 PARIS CEDEX 15

System for using restaurant credit

The system according to the invention does away with the tasks of handling and transporting paper.

A system for using restaurant credit comprising issuers, companies, restaurants, users and a center for settling the restaurant credit, wherein the issuers 1 issue information representing the restaurant credits as meal-units which are recorded in the company terminals 2, each company terminal 2 serving to load users' restaurant credit cards 3 with meal-units, each restaurant being provided with a terminal 5 into which the restaurant credit cards 3 of the users are offloaded, the information relating to the meal-units cashed in each restaurant terminal 5 being transmitted to the terminal of the credit settlement center.

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System for using restaurant credit

The present invention deals with a system for using restaurant credit comprising issuers, companies, restaurants, users and a center for settling the restaurant credit.

It is known to use restaurant vouchers for staff which are delivered for issuer services

- these vouchers are bought by companies which provide them to their staff. These vouchers are accepted by restaurateurs who get them reimbursed through a center for settling orders with the agreement of the issuers,
- this system is unwieldy and its operating cost is high. The system according to the invention does away with the tasks of handling and transporting paper; moreover, it allows the temporal monitoring of the cash flows of companies and restaurants.

Finally, it makes it possible to circumvent the constraints of the post.

The system according to the invention is one wherein the issuers issue information representing the restaurant credits as meal-units which are recorded in the company terminals, each company terminal serving to load users' restaurant credit cards with meal-units, each restaurant being provided with a terminal into which the restaurant credit cards of the users are offloaded, the information relating to the meal-units cashed in each restaurant terminal being transmitted to the terminal of the credit settlement center.

The invention will be better understood in the light of the description which follows in conjunction with the appended figures.

Figure 1 represents a system diagram according to the invention.

Figure 2 represents an exterior view of a possible restaurant credit card according to the invention.

Figure 3 represents an electrical diagram of the card of Figure 2.

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Figure 4 represents a variant of the card of Figure 2.

Figure 5 represents a perspective of a company terminal according to the invention.

Figure 6 represents an electrical diagram of the terminal of Figure 5.

Figure 7 represents a perspective of the portable terminal according to the invention.

Figure 8 represents an electrical diagram of the terminal of Figure 7.

Figure 9 represents a perspective of the restaurant terminal according to the invention.

Figure 10 represents an electrical diagram of the terminal of Figure 9.

In Figure 1 the schematic shows the links between the issuer 1, the company terminal 2, the restaurant credit cards 3, the portable terminal 4, the restaurant terminals 5 and the terminal of the center for settling credit 6.

The issuer can be linked in two ways to the terminal of the company 2 by downloading (link 7) or by dispatch and return of control memories (links 8 and 9).

The company terminal 2 serves to load the restaurant credit cards 3 (link 10), the latter may be loaded directly by the issuer 1 (link 11).

The restaurant credit cards 3 may be offloaded into the restaurant terminals 5 (link 12) or into portable terminals 4 (link 13), said portable terminals 4 being offloaded into the restaurant terminals 5 (link 14).

The restaurant terminals 5 are downloaded into the terminal 6 of the credit settlement center (link 15) or by dispatch and return of memories (links 16 and 17).

THE ISSUER TERMINAL:

It is possible firstly to transfer the characteristics of the company's order by downloading from the terminal of the company 2 on the basis of the issuer's IT system. This

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transfer is done in this case via the switched network (link 7).

The procedure will be designed in such a way as to ensure that the transmission is completely secure.

The advantages of this technique are numerous; however the main one is to be able to bring about the instantaneous delivery of the order upon payment therefor.

Another solution, less radically different from the current solution, consists in using memory modules; the latter are small objects of the size of a pocket calculator, able to store an appreciable volume of information and able to be transported without any particular protection (links 8 and 9).

This is an object of small weight and small dimensions, withstanding sufficient mechanical stresses to be transported by the postal services without special packaging. The memory is sufficient to include therein the details of the apportioning of the meal-units within the framework of a company of around 200 people.

Power is supplied via a replaceable cell during the operation of writing the monthly credit of the company. Care will be taken to ensure that the assembly can run for around 6 months between recharges.

This solution offers the advantage of representing a tangible delivery to the company which may be the issuer's opportunity for contact with his customer.

The following organization diagram is conceivable, at the order-taking and delivery level:

- the company places its order by telephone;
- the issuer transcribes this order onto a document of UPO type,
- the company dispatches its settlement check,
- on receipt of the check, the issuer postmarks this check (subsequent advantage at banks) and forwards this document and the UPO to a collection terminal. This apparatus

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automatically makes the correlation between the two documents and authorizes, i.e. the downloading of the memory modules.

These two operations may be performed in an automated fashion:

- totally automatic in the case of downloading; in this case it suffices to connect to the collection terminal a microcomputer capable of dispatching over the telephone network the messages subject of the delivery of the meal-units to the company,
- simplified in the case of usage of memory modules; these modules are loaded by virtue of the microcomputer connected to the collection terminal. In this case an operator is necessary for the module supply.

The two devices (downloading and cards) may be used together.

It is also possible to envisage another means of delivering the meal-units; this is the case where the company does not itself want to be in charge of the apportioning of its order and prefers to leave this job to the issuer. In this case, the latter will be furnished with terminals identical to those dedicated to the company which will allow the loading of the individual credits into the restaurant credit cards 3; handling is more significant than in the pervious cases but it is important for this kind of organization to be able to have preference when the customer companies are of modest size.

It is entirely possible for this third device to be used with the other two.

THE RESTAURANT CREDIT CARD:

The restaurant credit card 3 is a small object easily housed in a pocket or a wallet; its dimensions are approximately: 50 x 35 x 7 mm.

Figure 2 shows on the front face:

- 2 buttons (18, 18) making it possible for:

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- the first to enable the debit of 1 or 2 meal units or to cancel this enabling,
- the second to consult the remaining balance.
 - a device 19 for displaying the debit enabled and the balance (alternately).

On the rear face are the optical interfaces 20 for coupling with the restaurant terminals 5 and the portable terminals 4.

Internally (see Figure 3) are included the microprocessor 21 managing the assembly, a memory storing the monthly credit and its balance, as well as the identification of the bearer and that of his company. Provision may be made for it to be impossible to deduct each day more than the authorized maximum of meals/units. The microprocessor 21 is linked to the input by an optical interface 22 as described in patent application No. 8,609,206 filed on June 25, 1986 and the text of which is incorporated in the present application by reference.

Power is provided through an inductive loop 23 to an accumulator 24 supplying the microprocessor 21.

The microprocessor 21 reads and records in a memory 25 containing the information regarding identification and credit in meal-units. This memory 25 is powered by a cell 26.

As a variant the restaurant credit card 3 may have an elongate form that can be slipped into a pocket to the back of which it can be pinned by virtue of a clip (20) (see Figure 4).

THE COMPANY TERMINAL:

This terminal 2 is intended to allow the company to distribute the meal-units, subject of its order, to its staff and to place each staff member's credit in his personal restaurant credit card 3.

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This apparatus can operate autonomously or more generally be hooked up to a computer via a V24 type link and a simple protocol of the teletype kind.

The terminal takes the form of a box of small dimensions (25 x 20 x 10 cm; approximately) (see Fig. 5).

Its upper face contains a keypad 27 allowing all commands, a display 28 so as to be able to monitor the operation in progress, a printer 29 for logging the transactions, and a slot 30 allowing the insertion of the Restaubadge to be processed.

On the side is a housing 31 for the specific memory card cassette 32 containing the balance of the meal-units to be apportioned.

On the rear face are the supply socket and the socket for hook-up with the company's management system, if there is one.

The terminal (see Figure 6) comprises a microprocessor 32 linked by a link 34 of the V24 type to an outside management system (SG), it may be linked by an optical interface 35 to a restaurant credit card 3. A mains supply 36 supplies the microprocessor 33 via the interface 35.

The microprocessor 33 comprises an output on the display 28 and on the printer 29. It is linked to the memory card 32 and information may be entered into it via the keypad 27.

The cassette or the specific memory card 32 containing the monthly volume of meal-units consumable by the company personnel, is introduced into the terminal 2. The apportioning of these units in the restaurant credit cards 3 of the personnel is entrusted to an employee who is the custodian of a personal access code. This code is tabulated on the keypad 17 before the subsequent operations.

A restaurant credit card 3 is inserted into the company terminal 2. If this card 3 has not yet been used, the identification of the member of staff is written; if the card 3 has already been used, the identification of the member of

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staff is checked. Next, the validation period is written; the old balance is canceled or carried over; finally, the meal-units are recorded in the form of the index of the first unit and of the number of these units. The credit thus delivered is deducted from the credit contained in the memory 32 and the transaction is ticketed on the logging printer 19; this information is at the same time available on the serial link for processing on the company's computer. In parallel, the details of the apportioning of the meal-units are written to the memory card 30, which once returned to the terminal 6 of the settlement center will allow any useful correlation to be made with the content of the cards 30 returning from the restaurants.

THE PORTABLE TERMINAL

The object of the portable terminal 4 is to provide a restaurant waiter with a small apparatus capable of automatically cashing the meal-units on presentation by the customer of his restaurant credit card 3.

The portable terminal 4 is a lightweight and compact apparatus that the waiter carries with him or wears on a belt while serving. The target dimensions are around 20 x 5 x 3 cm and the weight is less than 400 grams (Fig. 7).

It takes the form of a neatly designed, impact-resistant leaktight box.

On the side is the slot 7 making it possible to insert the restaurant credit card 3 and to connect the portable terminal 4 to the terminal of the restaurant. On the upper face are disposed 2 buttons 31, 39 controlling the 2 functions of the apparatus;

- cashing of meal-units,
- output to the terminal of the restaurant 5.

A display indicates the operation in progress. An audible beep signals the end of the operation.

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The portable terminal (Figure 8) comprises a microprocessor 4 which can be linked by an optical interface 42 to a restaurant credit card 3 or to the company terminal 2.

An accumulator 43 supplying the microprocessor 4 is linked by an inductive loop 44 to the restaurant credit card 3 or to the restaurant terminal 5. This accumulator 43 is charged during linkage with the restaurant terminal 5 and when it is linked to the restaurant credit card 3 it serves to supply the microprocessor of the restaurant credit card 3. The microprocessor 41 is linked to a memory 45 recording the transactions supplied by a cell 46. The microprocessor 4 is also linked to the display device which is also designed to provide an audible beep.

Use as a cashing terminal takes place in the following manner:

- the waiter asks the customer to validate on his restaurant credit card 3 the meal-unit (or perhaps more depending on tolerance of the legislation in force) and asks him for this card so as to insert it into the slot 34 of his terminal 4. Pressing the "encashment" button enables the transaction. The card is debited; the transaction is stored in the terminal.

Use in "Output" mode takes place in the following manner:

The portable terminal 4 is inserted into the housing of the terminal of the restaurant 5 and "output" is enabled by pressing the corresponding button 39. The operation is under the complete control of the restaurant terminal 5. The outputting operation is designed to be daily. It is accompanied by the recharging of the batteries of the apparatus.

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THE RESTAURANT TERMINAL

This terminal 5 is intended either for direct encashment of the meal-units from the restaurant credit cards of the customers or for recovering the meal-units which have been encashed with the aid of the portable terminals and for preparing the memory cards 53 intended for the terminal 6 of the credit settlement center with a view to the payment of the restaurant. It may be common to several issuers 1.

The restaurant terminal 5 is an apparatus of small dimensions (around 20 x 20 x 5 cm) in its basic version.

It takes the form of a plastic box (see Fig. 9). It has:

- a housing 47 intended to receive a portable terminal 4 and fitted with a coupler 47' that plugs into the slot of the terminal 4,
- a slot 48 for the restaurant credit card 3 to be processed,
- a housing 49 for the memory card 53 intended for the terminal 6 of the credit settlement center,
- a keypad 50 for the control of operations,
- a printer 51,
- a display 52 for reporting.

Power is supplied from the 200 V 50 Hz mains.

The terminal 5 can be connected to a rack 56 intended to contain portable terminals 4 with a view to the operation of outputting the information to the restaurant terminal 5 and of recharging the accumulators of portable terminals 4; this rack 56 is an assembly of modulo-1 receptacles clipped together to form an apparatus placed on a table or fastened to a wall. This rack 56 is indispensable to restaurants having several portable terminals 4.

The restaurant terminal (see Figure 10) comprises a microprocessor 54 that can be coupled by an optical and supply interface 55 to a restaurant credit card 3, to a portable terminal or to the rack 56 and to the mains supply

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57; it is coupled by a line 15 with the terminal 6 of the center or used a specific memory card 53.

The manner of operation is identical to that of the portable terminal 4 for the encashing of meal-units from restaurant credit cards 3.

Additionally, at the end of the day, the portable terminal 4 has to be emptied of its information for the day, prepared for the next day's operations (incorporation of the date for example), recharged so as to have enough power for a day's transactions. All these operations are performed automatically, driven by the restaurant terminal 5.

The portable terminal 4 is placed in the housing 47 and in case of a restaurant with several waiters, all the portable terminals 4 are placed in the rack 56. The recharging operations are started simultaneously while the operations of emptying and reconditioning the portable terminals 4 are conducted sequentially under the control of the restaurant terminal 5. All the day's transactions thus gathered are dispatched to the memory card 53 placed in the terminal 5. Once full, this card 53 will be replaced with another available one, and the gathering of the information will continue.

Simultaneously with the transfers to the card 53, a log is printed out, listing each transaction with its identifications and printing the aggregates for the day and the aggregates for the records on a card 53.

The list of transactions performed in the restaurant is transmitted by a telephone line 15 to the central credit settlement terminal (or the Issuer).

This transmission may be made at dates agreed with this center. However, the automatic nature of this mode of data transmission permits great flexibility in this area.

Just as in the link between the issuer 1 and the company, it is possible for the center to be sent the count of the meal-units consumed in a restaurant with the aid of

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specific memory cards 53. The latter possess sufficient capacity to store the daily transactions arising from 2 portable terminals 4 at least.

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CLAIMS

1. A system for using restaurant credit comprising issuers, companies, restaurants, users and a center for settling the restaurant credit, wherein the issuers (1) issue information representing the restaurant credits as meal-units which are recorded in the company terminals (2), each company terminal (2) serving to load users' restaurant credit cards (3) with meal-units, each restaurant being provided with a terminal (5) into which the restaurant credit cards (3) of the users are offloaded, the information relating to the meal-units cashed in each restaurant terminal (5) being transmitted to the terminal of the credit settlement center.

2. The system for using restaurant credit as claimed in claim 1, wherein the restaurant is fitted with small portable terminals (4) into which the restaurant credit cards (3) can be offloaded, each small portable terminal (4) being offloadable into the terminal of the restaurant (5).

3. The system for using restaurant credit as claimed in claim 1, wherein the restaurant credit cards (3) of the users each comprise two buttons (18, 18') on their front face, a first button (18) making it possible to enable the debiting of one or more meal-units and to cancel this enabling, the second (18') making it possible to consult the remaining balance, and a device (19) for displaying the enabled debit and the balance, and on their rear face optical interfaces for coupling with the terminals, said cards (3) comprising internally a microprocessor (21) managing these various functions as well as a memory (25) storing on the one hand the monthly credit and its balance and on the other hand the identification of the bearer and that of his company.

4. The system for using restaurant credit as claimed in claim 3, wherein the restaurant credit card (3) is fitted with a clip (20) making it possible to carry it like a pen.

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5. The system for using restaurant credit as claimed in claim 2, wherein the portable terminals (4) each comprise a slot (37) making it possible to insert the restaurant credit card (3) and to connect them to the terminal of the restaurant (5) and wherein they comprise two buttons (38, 39) on their front face, one for controlling the cashing of the meal-units and the other the outputting into the terminal of the restaurant (5), these two operations being viewable on a screen (40).

6. The system for using restaurant credit as claimed in claim 5, wherein the restaurant terminal (5) comprises a slot into which a restaurant credit card (3) may be introduced as well as a housing (47) fitted with a coupler (47') for plugging into the slot (37) of the portable terminal (4) thus allowing the outputting of the information from the portable terminal (4) and its charging with electrical energy.

7. The system for using restaurant credit as claimed in claim 6, wherein the restaurant terminal (5) comprises a housing (49) for receiving a memory card (53) in which the details of the apportioning of the meal-units received are recorded.